

Lehrbuch der Chemie und Mineralogie. By Prof. G. Siebert. 3 vols. Pp. viii + 101, vi + 144, vi + 110; figs. 100, 91, 32. (Braunschweig: Friedrich Vieweg und Sohn, 1901.) Price Mk. 4'25.

THIS text-book, which is intended for use in higher schools, does not differ to any very remarkable extent from numerous other elementary treatises on the same subject. Perhaps the first volume, described as an introduction to chemistry and mineralogy, shows the most originality in treatment. In this part the beginner is made acquainted with the most important chemical processes, such as oxidation and reduction, and is taught something of the more common chemical compounds, mainly by means of experiments, of which a hundred are fully described. These experiments are in most cases quantitative, and involve the weighing of gases as well as of solids and liquids. The laws of chemical combination which receive their expression in the atomic theory are thus impressed on the student by his own actual quantitative results. The treatment of the mineralogy is of a somewhat perfunctory character. The six systems of crystals receive the usual brief and inadequate exposition common to chemical text-books, and the Naumann system of notation for the crystal-faces is explained, but no mention is made of Miller's system. A review of the most important minerals appears at the end of the volume, and brief descriptions, with figures of the crystals, of natural phosphates, sulphates, &c., are given in their appropriate places in the text. The second volume is devoted to inorganic chemistry, and the elements with their principal compounds are treated in turn, the non-metals in the order of their valencies, and the metals in the usual groups. The third part deals with organic chemistry. Structural formulæ are explained, but the treatment is sufficiently elementary, as is evident from the fact that the whole subject of both fatty and aromatic compounds occupies less than a hundred pages. In an appendix are given the descriptions of a number of simple experiments illustrating the methods of production and properties of some of the most important organic compounds. A very brief introduction to organic and volumetric analysis completes the volume.

Knowledge. Vol. xxiv., January to December, 1901. Pp. xii + 288. (London: Knowledge Office.) Price 8s. 6d.

SOME of the full-page photographic plates in this volume of *Knowledge* are very fine. Among the subjects are several brilliant photographs of star clusters and nebulae, taken by Dr. Isaac Roberts, constellation figures on Greek coins, lunar photographs, life-history of a sun-spot group, spectra of Nova Persei, and the solar corona of May 18, 1901. Mr. E. W. Maunder has a series of articles on constellation studies, in which he deals largely with the poetical aspects of the sky; Dr. Vaughan Cornish has four articles on the sizes of ocean waves; Mr. G. H. Carpenter describes insects of the sea; Mr. R. Lydekker writes on a number of subjects of zoological interest; Mr. H. F. Witherby on ornithological experiences in the Soudan; and Mr. R. Lloyd Praeger on flowering plants. There are numerous other articles of an instructive character.

A Geography of Wales. By A. E. L. Hudson, B.A. Pp. xii + 164. (London: Macmillan and Co., Ltd., 1902.)

THIS book is intended chiefly for use in Welsh schools, and the general idea borne in mind in its preparation is that the best foundation for a knowledge of geography is the study of the land and the people of the district and country in which the pupils live. The attention given to physical geography and to civic affairs, such as local and national government, and population and its distribution, is noteworthy. There are many attractive illustrations, which, with the instructive text, will serve to commend the book to the attention of teachers.

NO. 1684, VOL. 65]

LETTERS TO THE EDITOR.

(The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of NATURE. No notice is taken of anonymous communications.)

Fall of Mud or Dust.

My men here noticed on Thursday last the 23rd inst. that the leaves, glasses of the frames and iron work of the gates were smeared with a reddish mud; one hedge in particular they described as almost covered with the substance; and the pinafores of a cottager's children which were hanging out to dry were so stained with the deposit that they had to be rewashed. When the substance fell no one here knows, nor is it clear whether it fell as dust or mud; from the firm way in which it has attached itself to the iron work I should think that it fell as mud.

Unfortunately, I did not hear of the event till some days afterwards, and I first saw the deposit yesterday. It was still, notwithstanding a good deal of rain, to be seen on the iron work, the glasses of the frames and on leaves. I send for your inspection herewith a laurel leaf, down the sides of the midrib of which you will find some of the deposit in question. Possibly some expert may be able to determine the nature of the deposit. It does not appear to me to be silica.

I append cuttings from local papers, showing that the phenomenon was observed elsewhere. Lawrence Weston is some five miles north-east from hence, Chewton Priory some fifteen miles south-east, and Barry Island some twenty miles west-by-south and on the other side of the Bristol Channel.

Failand, January 28.

EDW. FRY.

From the *Bristol Times and Mirror*, January 21.

A CURIOUS STORM.

SIR,—I thought the readers of your valuable paper would be interested to know that on Thursday morning we had what I think a rather strange storm, about a quarter past seven, of about 15 minutes' duration. After it got light I found quite a covering of dust on the glass on the garden frames, about the colour of Bath brick dust. Not having seen any account of it in your paper, I thought I should like to hear if anyone else had noticed it.

Yours truly,

Lawrence Weston, Henbury, January 24. A. DENHAM.

From the *Western Daily Press*, January 28.

SINGULAR PHENOMENON.

SIR,—Seeing in your paper of yesterday's date a paragraph about a mysterious red substance which fell at Barry Island on Wednesday last, I write to say that a somewhat similar phenomenon occurred here.

Wednesday the 22nd was with us very warm, with wet mist only measuring 0.02 of rain. Afterwards the glass and wood-work of the greenhouses and frames were covered with a rust-coloured dust, which has left stains on the paint.

Yours faithfully,

Chewton Priory, Bath, January 26.

WALDEGRAVE.

Change of Pitch of Sound with Distance.

I HAVE read with considerable interest the letter by Mr. Paul R. Heyl on this subject in your issue for January 23. Speaking off-hand, I should have agreed with Mr. West, that pitch rises with distance; but, in view of the experience of your later correspondent's grandfather, I am inclined to adopt the contrary view. Many years ago I was sitting with an organist friend listening to a fugue on an organ—I think the player was the late Mr. Thomas Adams, and the fugue one of the immortal "Forty-eight" of Bach. At any rate, it was in a minor key; but I noticed that the last chord was *major*. "Why," I asked my friend, "does he end with a major chord?" "Because," was the reply, "sound has a tendency to rise in a long building like a church, and therefore the writer anticipated this by writing his final chord with a major third." But was this the reason? If the late Mr. Knauff was right, it was probably to allow for the third dropping, and the chord reaching the listeners as a minor chord, in keeping with the rest of the piece.

Of course, everybody knows that the practice above alluded to of ending a minor piece with a major chord is by no means uncommon with Bach. For example, in his "Grosse-Passions-Musik," the chorus which follows the duet, "My Saviour Jesus now is taken," ends (according to the English version by Miss Johnston) with the words, "the treach'rous betrayer, the murderous throng." Bach has reiterated them—the first time with a minor chord (E), with G natural, on the word "throng"; the second time with a chord on the same key-note, but with a major third (G sharp) and a pause. The effect is thrilling. Surely there could have been no allowance for drop here. Handel, on the contrary, begins and ends his chorus, "And He shall purify," in the "Messiah," in G minor, although the two succeeding pieces are in D major, with which key the previous piece would have been brought into relationship by the raising of the third.

This is a digression from the subject of your correspondents' letters, which probably never entered the minds of the great masters named.

R. FREEMAN.

London, February 3.

A Lunar Romance.

Is not Mr. Wells right in the description of the effect referred to by the reviewer of his "First Men in the Moon" (p. 218)? The sphere itself, as a whole, is *not* attracted by gravity. The action of gravity has effect only in the line (?) through the open window, and, *quâ* the sphere, would only affect that part which would be directly in a straight line from the moon through the window.

F. C. CONSTABLE.

Wick Court, near Bristol.

IN answer to Mr. Constable, I think we cannot allow that the sphere is not attracted by gravity. I understand it to be a sphere of solid glass, PQ, inside a cavorite covering, RS (Fig. 1).

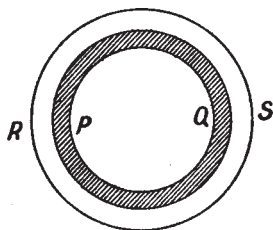


Fig. 1.

In the case considered, the covering is removed through a wide angle AB, thus described (p. 62): "Four windows were open in order that the gravitation of the moon might act upon all the substances in our sphere." Hence the gravitational beam

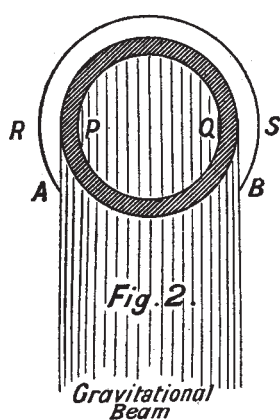


Fig. 2.

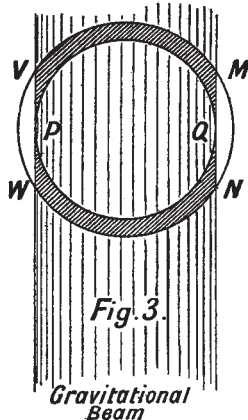


Fig. 3.

reaches the whole of the glass sphere itself (Fig. 2); unless (Fig. 3) Mr. Wells means to reserve little pieces, VW and MN, at the sides outside the beam. In this case the total mass of

the sphere remains the same, but is not all acted on by gravity; so that the acceleration of the whole would be *less* than g (in the ratio of mass acted on to total mass), *i.e.* less than that of objects within, which would promptly settle to the "floor."

If Mr. Wells was thinking in this subtle fashion I withdraw my criticism, and Mr. Constable will see that I have left an open door for myself in the review for withdrawal. I may say it was left open expressly in view of this possibility. But the context does not suit this view at all well.

THE REVIEWER.

Cherry Leaf Disease.

THE question raised by Sir W. T. Thiselton-Dyer's letter is a very important one, and I venture to offer a few observations on it.

It is impossible that Mr. Bennett—still more Mr. Carruthers—could have intended to suggest that the experts at Kew and the British Museum are not competent to investigate such diseases as the above when they are submitted to them. They probably meant that an organised system is wanted in every county, by means of which an outbreak of any such disease should be at once brought under their notice. This could only be satisfactorily done by local inspectors, who would be in touch with the farmers on the one hand and the experts on the other. It should be part of their duties to keep accurate records of temperature and rainfall in order to show the connection, if possible, between these and the disease. These officials would naturally be appointed and paid by the County Council.

As regards the outbreak of Gnomonia mentioned by Sir W. T. Thiselton-Dyer, it is a curious fact that in most of the orchards about here affected by it in 1900 the disease has almost disappeared, though no preventive measures such as stripping the leaves were taken. It would, however, be very unfair to blame the advisers of the Royal Agricultural Society for raising a false alarm; in the case of a disease not known to have occurred in this country before, they were clearly bound to act upon the best information they could get—that of Frank—and warn the farmers. The more equable climate of England, as compared with Germany, is probably the cause of the different result, the effects of comparatively small differences of temperature and moisture being vastly more important than is generally believed.

ALFRED O. WALKER.

Ulccombe Place, near Maidstone, February 2.

Extremes of Climate in the British Empire.

YOUR correspondent (p. 299) who writes under this head in the current number of NATURE would make the labours of an editor as super-Herculean as those of the Highland minister who was called upon to incorporate the whole body of divinity in every sermon lest his flock should be misled.

That it would be wrong to generalise on the climates of the British Empire from eighteen stations, or to claim any one of them as the hottest or the wettest point, is obvious; but even in the few lines of your abstract you have not done this, and in my original summary (*Symons's Meteorological Magazine*, November, 1901, p. 167) I said:—

"It is true that neither the hottest, the coldest, the wettest nor the driest points in the Empire are dealt with; and the reader is warned, as on each previous occasion of presenting this annual summary, not to take the figures as meaning more than they profess to convey."

In order to secure continuity in the records, which are published monthly, it is necessary to obtain them from regular observatories: these are, unfortunately, few; but, fortunately for the student of climatology, they are usually situated in districts of normal rather than of extreme climate. Additional observations would certainly be welcome, and I hope during the present year to be able to publish monthly records from at least twenty-five stations in all the Britains.

HUGH ROBERT MILL.

62 Camden Square, London, N.W., January 31.

Elementary School Mathematics.

IN connection with the present discussion on the teaching of elementary mathematics in schools, and the recommendation made by many experienced teachers that much use should be made in geometry—at any rate in the earlier stages of actual